ABSTRACT OF THE INVENTION

Sensors are mounted within a seat structure for measuring seat occupant weight. The sensors can be mounted in any one of various sensor configurations. So that common hardware can be used for each different sensor configuration, a virtual matrix is created and output from the sensors is mapped into the virtual matrix. The virtual matrix includes virtual cell locations that do not have a corresponding sensor output; i.e., there are fewer physical cells (sensors) than virtual cell locations in the virtual matrix. A weight output signal from each sensor is mapped into the corresponding position in the virtual matrix and the remaining virtual cell locations have values assigned to them based on data supplied by the surrounding physical cells. Seat occupant weight is determined based on output from the virtual matrix and the occupant is placed into one of the various occupant classifications. Deployment force of a restraint system is controlled based on the classification of the seat occupant.

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